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WPI Acc No: 1999-045380/199904

XRAM Acc No: C99-014289

XRPX Acc No: N99-033062

**Thin film igniter for pyrotechnic material especially of
airbag - has fuse bridge layer of hydrided hafnium and-or titanium**

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Number of Countries: 021 Number of Patents: 004

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| WO 9854535 | A1 | 19981203 | WO 98EP3009 | A | 19980522 | 199904 B |
| DE 19721929 | C1 | 19990128 | DE 1021929 | A | 19970526 | 199908 |
| DE 19732380 | A1 | 19990211 | DE 1032380 | A | 19970725 | 199912 |
| EP 914587 | A1 | 19990512 | EP 98929356 | A | 19980522 | 199923 |
| | | | WO 98EP3009 | A | 19980522 | |

Priority Applications (No Type Date): DE 1032380 A 19970725; DE 1021929 A 19970526

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|------------|------|--------|----------------|--------------|
| WO 9854535 | A1 | G | 24 F42B-003/13 | |

Designated States (National): JP KR US

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

EP 914587 A1 G F42B-003/13 Based on patent WO 9854535

Designated States (Regional): DE FI FR GB IT SE

DE 19721929 C1 F42C-019/12

DE 19732380 A1 F42C-019/12

Abstract (Basic): WO 9854535 A

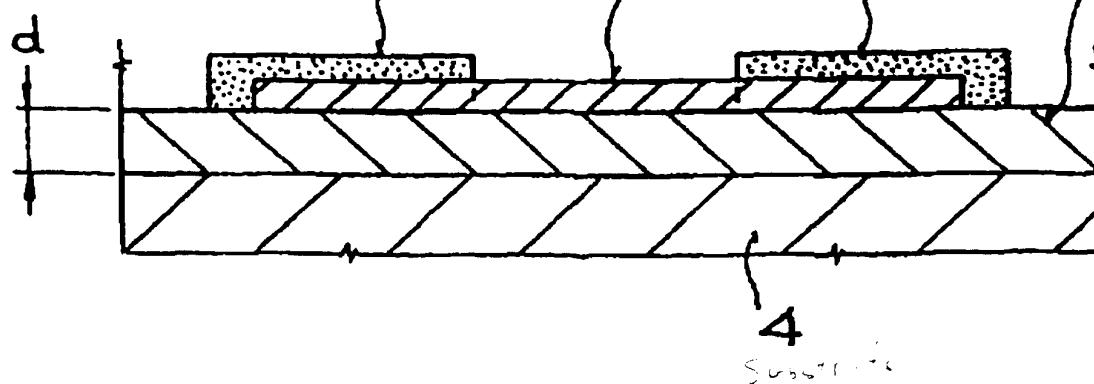
A thin film igniter element for pyrotechnic active materials consists of a substrate (4) bearing two electric contacts (1) connected together by a chemically and thermally active fuse bridge layer (2) which consists of a hydrided hafnium and/or titanium layer and which is preferably initiated by a plasma discharge. Preferably, the fuse bridge layer (2) consists of hafnium-free TiH_x (x = 0.5 to 2.0), titanium-free HfH_x (x = 0.025 to 2.0) or a hydrided hafnium-titanium mixture. Also claimed is production of the above thin film igniter element by (a) depositing and structuring a hafnium and/or titanium layer in accordance with the geometry of the fuse bridge layer (2) and the contacts (1); and (b) hydriding the layer preferably at about 350 deg. C.

USE - As an igniter for occupant safety devices, especially vehicle airbags.

ADVANTAGE - The igniter is capable of low energy initiation (a few mJ at an applied voltage of less than 50 V) so that it can be initiated by an automobile battery without the need for expensive voltage amplifiers, provides rapid ignition (in the millisecond range) of the pyrotechnic active material with extremely low efficiency losses and is

simple to mass produce by a process compatible with semiconductor device manufacture.

Dwq.1c/8



Title Terms: THIN; FILM; IGNITE; PYROTECHNIC; MATERIAL; AIRBAG; FUSE; BRIDGE; LAYER; HYDRIDED; HAFNIUM; TITANIUM

Derwent Class: K04; 079; X22

international Patent Class (Main): F42B-003/13; F42C-019/12

International Patent Class (Main): F42B-003/15; F42C-019/12
International Patent Class (Additional): C06D-005/06; F42B-003/12;
F42B-003/195; F42C-011/00; F42D-001/05

File Segment: CPI; EPI; EngPI
Manual Codes (CPI/A-N): K04-C

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